

FORGING A PRICK SPUR

ARTWORK

In the year 1357, the Guild of Spur-makers of Paris defined that a master was allowed one apprentice and at the completion of the training “the apprentice became a master capable of modeling, casting, hammering, engraving, and gilding, and he usually had developed an infallible instinct for purity of line and justness of proportion” (Grancsay 271).

Spurs are pieces of metal meant to be attached to, or worn over, the heels of a rider’s footwear. A projection from the back of the spur, called the goad, is used to prod the horse. Spurs are very basic tools that are used to help encourage horses to move in different directions.

There are many surviving and well-documented examples of prick spurs in the Museum of London: *The Medieval Horse and its Equipment* (abbreviated MoL Horse throughout this article). While I was able to view several collections online, my most valuable resource was the 12th C. spur I purchased (figure 1). Although it has curved arms typical of the late 12th C. instead of the straight arms of the earlier 12th C. spurs I studied, it provided further hands-on insight about how a one piece spur was made in the Middle Ages.

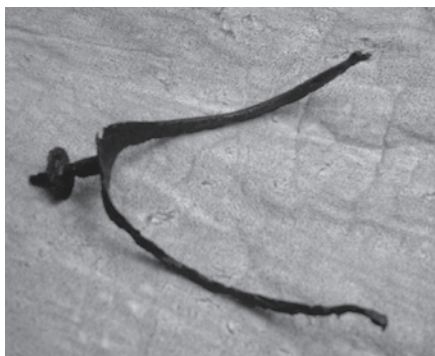


FIGURE 1

photo by Daniel Cadwell | *Giraldus Eviencec*

THE PRICK SPUR OF 12TH C. WESTERN EUROPE

“During the 12th century, spurs with their necks formed almost entirely into large and quite heavy quadrangular lozenge-shaped goads were popular throughout England and western Europe (No. 319).”

(MoL Horse 127)

The Western European early 12th C. prick spur is characterised by thin straight arms ending in terminals with slots or holes and a short neck with a faceted goad projected backwards.

As you can see, this type of spur is simply a single piece of metal that looks like a wishbone. The projection from the back of the wishbone is the neck and the neck ends in the goad. The neck and goad project from the very center where the two arms meet. The broad base of the goad is designed so it will not impale the horse.

The rest of the spur is composed of two arms that wrap around the heel toward the front of the foot. Each arm ends in a terminal, slightly wider and pierced to allow fastening the spur leathers to the boot. Spur leathers are pieces of leather that are fitted through the slots or holes of the terminals and then wrap around towards the front of the foot where they are fastened. It is then attached to the heel of a mounted warrior’s boot or footed chainmail.

Later spurs were not as simple; the

arms were curved and a rowel (a wheel of multiple points) was attached to the neck instead of the simple goad to prod the horse.

The spurs of the 12th C. were forged of iron, and to be specifically descriptive, we would refer to this method as wrought iron or worked iron. The wrought iron of the Middle Ages consisted of a mostly-pure iron with ferrous silicate spicules distributed throughout it. This allowed the iron to be hammered into shape upon heating. This is in contrast to cast iron, which cannot be hammered without breaking it apart. Cast iron is formed in a mold.

The iron in the Middle Ages was obtained in various diameters, including 1 cm diameter bars that were several feet. These bars were sold to craftsmen such as the spurrier. The spurrier would then cut this 1 cm market bar to a workable length. Based on the 14 cm length that I used, it appears that the medieval spurrier’s starting stock would also have been about 14 cm long.

Parts of a Spur

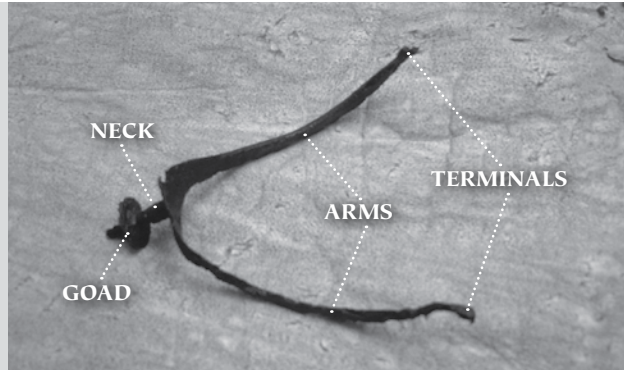


photo by Daniel Cadwell | Giralduš Eviencec

It is important to remember that now, as in the Middle Ages, the the ironworker's mental process is consistent: ironworkers (i.e., blacksmiths) look at a finished product and think of the most efficient way to make it. They also consider the tools they have available to make an item and often they will make any tools they need. Ultimately, two of their many goals were to make an item so that it will be both strong and unbreakable in repeated use.

To make this prick spur, I worked with Wayne Lewis | *Lewis the Smith*, a professional ornamental ironworker for over twenty years. He was instrumental in supplying the forge, stock and tools.

To make my spur, Wayne and I selected a piece of 1 cm half-round mild steel bar that was 14 cm long. Mild steel has two advantages: it is readily available and it hammers in a similar fashion to wrought iron. This is important as the type of metal used dictates how it can be forged.

I heated the end of the bar in the forge (figures 2 and 3). Wayne showed me how to hot-chisel a cut down the center of the metal bar as follows: One person held the cool end of the metal in tongs. This end was not split and eventually became the goad.

The heated end of the metal was then hit hard enough that as Wayne and I alternated, we were able to repeatedly hammer the sharp end of the chisel into the hot metal until a clear, deep depression was marked about 4/5 of the length into the center (figure 4).

This portion of the bar was reheated again and then the depression in the metal was fit over a stationary chisel on the anvil. The hot metal was hit directly with a bronze hammer until the stationary chisel finally cut through the length of the rod splitting that portion open but leaving the final 1/5 of the cooler end (that is, the goad) intact (figures 5 and 6).

We used a bronze hammer so it would not damage the stationary chisel. An alternative Society-period method to cut metal would be to use a hand saw, but hot-chiseling is decidedly more efficient than sawing it by hand.

I hammered the split ends apart until the whole thing looked like a wishbone



FIGURE 2 photo by David Cadwell | Agelos Eviencec
Author heating bar stock at the forge.



FIGURE 3 photo by David Cadwell | Agelos Eviencec
The bar stock has been removed from the forge and is ready to be worked.

Spurs are also referenced as Spor, Sporn, Spore, and Spurre. Prick spurs were commonly used before 13th C. and were called just 'spurs.' Rowel spurs existed concurrently with prick spurs during the 13th C. and became more popular after the 13th C. but they are specifically called 'rowel spurs.'

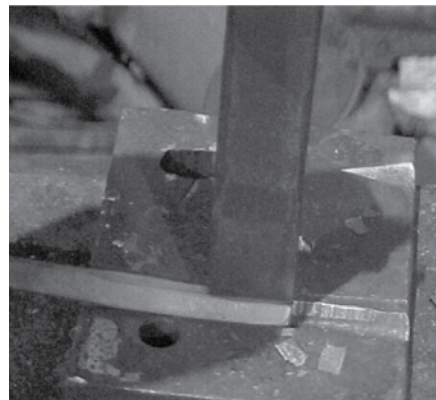


FIGURE 4 photo by David Cadwell | Agelos Eviencec
Hot chiselling down the center. Note the chisel is placed on top of the heated metal, which is positioned on an anvil. The barstock is held with tongs by one person, while the second person chisels down the center of the hot metal. This creates a shallow depression in the metal, which will later be worked open to form the arms of the spur.

FORGING A 12TH C. WESTERN EUROPEAN PRICK SPUR

(figure 7). While I heated the neck of the spur in the forge, Wayne made a tool that looked to me like a big cotter pin (figure 8), correctly known to a blacksmith as a fuller tool. Once the metal was hot enough, I pushed the neck of the spur between the arms of the fuller tool and held the spur with tongs while he hammered on the arms of the fuller. This compressed the neck to a much smaller diameter and pushed the extra metal out towards the very end of the piece. This process is called necking down the metal. This extra metal later became the goad.

Wayne made the fuller tool because it was what a medieval blacksmith would have used; the modern method calls for an electric power hammer or similar technology. Alternatively, we could have fullered the neck simply by placing the neck area of the spur on the edge of the anvil and hammering the area while turning the piece.

I then heated the goad end of the spur in the forge and hammered on the goad, working to make it octagonal. Once I was satisfied with the shape of the goad, Wayne took the spur and started the process of shaping the arms. He heated the arms and then hammered them around the mandrel till they were more nearly crescent-shaped. (There are several types of mandrel, but in a blacksmith's forge the mandrel is a coneshaped piece of stationary metal on which straight pieces of metal or wire can be formed and hammered or worked into curved shapes.) Taking over from Wayne, I alternately heated the metal in the forge and hammered the spur arms around the mandrel until they were more symmetrical.

After I was satisfied that the spur was as symmetrical as possible, I placed the spur on the polishing wheel until it was shiny and smooth (figure 9). (If you want your methodology to be more accurate to Society period, use a file to polish the metal.) A hole for the spur leathers was then punched in the terminals. Alternatively, we could have necked down the terminals and then worked the very tip around a mandrel to make a 'ring', and attached the spur leathers through that.

The final dimensions of this replica medieval spur are almost the same as my



FIGURE 5 photo by David Cadwell | Agelos Eviennece
Using a bronze hammer to pound open the split in the hammer.



FIGURE 6 photo by David Cadwell | Agelos Eviennece
The heated metal is worked on top of a stationary chisel.



FIGURE 7 photo by David Cadwell | Agelos Eviennece
Spreading the arms of the spur.



FIGURE 8 photo by David Cadwell | Agelos Eviennece
Necking down the metal using a fuller tool.



FIGURE 9 photo by Donna DeBonis | Domwenna La Mareschale
The 'almost complete' completed spur.

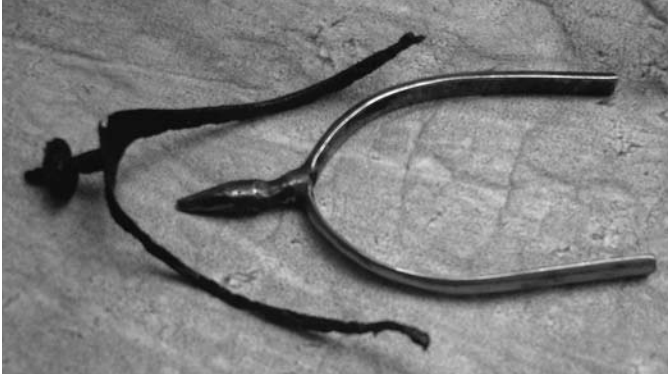


photo by Daniel Cadwell | Giralduš Evienece

Artifact on left and almost completed spur on right-shown together for comparison.

Online Resources

Armour Archives

www.armorarchive.org

Armourers and others who share ideas about many armor and metalworking topics at an online forum.

Anna Botterell

www.sportingcollection.com

Website by an English veterinarian of her personal collection of artifacts including spurs, Somerset U.K.

Ray Moseley

www.quietpress.com

Website with photographs of medieval spur replicas

Doug Odom

www.argentcompany.org

This website features a spur-making tutorial as well as his excellent workmanship of replica spurs.

Mark Shier

www.medievalwares.com

Medieval artifacts, including spurs.

Doug Strong

<http://talbotsfineaccessories.com/cgi-bin/antiquities.cgi>

Website of extensive antiquities collection including medieval spurs plus information on identifying the time period of spurs. Be sure to use the keyword 'spur' to find samples.

Davistown Museum

[http://www.davistownmuseum.org/PDFs/](http://www.davistownmuseum.org/PDFs/GlossaryOfFerrousMetallurgyTerms.pdf)

[GlossaryOfFerrousMetallurgyTerms.pdf](http://www.davistownmuseum.org/PDFs/GlossaryOfFerrousMetallurgyTerms.pdf)

Handbook for Ironmongers: A Glossary of Ferrous Metallurgy Terms includes time line with summary of historic events relating to the steel- and tool-making

artifact's dimensions: 130 mm overall length and 33 mm length from neck to goad.

One last note on making your own spur: spurs can hurt and I strongly suggest that if your spurs are intended for use rather than display, the tip of the goad should be filed slightly until it is blunt. (This precaution isn't just safer for your horse; it also will help you avoid possible injury to yourself or others.) The spur still will be effective without drawing blood.

Thanks to all the others who joined in and contributed to the spur-making discussion, including: Franchesca V. Havas | Chiara Francesca Arianna d'Onofrio, Doug Odom | Sigurd Ericsson, Thomas Powers | Wilhelm the Smith, Mark Shier | Mark de Gaukler, and Shane Stegmeier | Fionnbharr Mac Shane.

BIBLIOGRAPHY

Clark, John, ed. *The Medieval Horse and its Equipment, C. 1150-1450*. New York: Boydell P, 2004.

Edge, David. *Arms and Armor of the Medieval Knight*. New York: Crescent, 1993.

Grancsay, Stephen V. "A Pair of Spurs bearing the Bourbon Motto." *Arms & Armor Essays, The Metropolitan Museum of Art Bulletin 1920-1964*. New York, NY: Metropolitan Museum of Art, 1986. 270+

Hall, Robert M. *How to Make Bits and Spurs*. CA: Casey Printing, 1985.

Smith, Cyril S., and John G. Hawthorne, trans. *On Divers Arts : The Foremost Medieval Treatise on Painting, Glassmaking and Metalwork*. Minneapolis: Dover Publications, Inc., 1980. 183-85.

Zschille, Richard, and R. Forrer. *Der Sporn in Seiner Formen-Entwicklung*. Berlin, 1899.

AUTHOR:

DONNA DeBONIS is a veterinarian retired from private mixed animal practice who now works for the US government in Public Health Medicine. She is married, has two children, many pets, and a herd of horses.

DONWENNA LA MARESCHALE was born in 1176 to a Noble Norman warrior and his Ladywife, a Welsh daughter of a Marcher Lord. Her family raises and trains warhorses for wealthy nobles. Donwenna is often called upon to demonstrate the abilities of the horses as it is perfectly acceptable for her to carry and use hunting weapons in pursuit of game.

PHOTOGRAPHERS:

DAVE CADWELL has been in the SCA for over 30 years, and has served as the Kingdom Equestrian Officer for both Caid and An Tir. He is married and has two children.

<http://www.lanceofstanne.com/Agelos.html>

AGELOS EVIENECE had little inheritance to look forward to as a third son, but his Varangian father had taught him to fight man to man, and he learned these lessons well. In 1089, upon coming of age, he was gifted with a horse, weapons, and armor, and with this he has made his fortune.

DANIEL CADWELL is a high school student and has his own horses, Valerius and Andromeda. He has been in the SCA his entire life and enjoys archery, darts, equestrian activities, and heavy weapons sword fighting. To date, he is the youngest recipient of the An Tir grant level award for equestrian prowess.

GIRALDUS EVIENECE is the son of Agelos Evienece and Donwenna La Mareschale, former Society Equestrian Officer. There is no doubt that he has inherited their equestrian abilities. He seeks to follow in his parents footsteps. <http://picasaweb.google.com/donwenna/GiraldušEvienece>